



US006016495A

United States Patent [19]

McKeehan et al.

[11] Patent Number: 6,016,495

[45] Date of Patent: Jan. 18, 2000

[54] **OBJECT-ORIENTED FRAMEWORK MECHANISM FOR PROVIDING PERSISTENT STORAGE**

[75] Inventors: Michael D. McKeehan; Erik E. Voldal, both of Rochester, Minn.

[73] Assignee: International Business Machines Corporation, Armonk, N.Y.

[21] Appl. No.: 08/934,230

[22] Filed: Sep. 19, 1997

[51] Int. Cl.⁷ G06F 17/30

[52] U.S. Cl. 707/103; 707/102; 707/103; 707/104; 395/701

[58] Field of Search 707/102, 103, 707/104; 395/701

[56] References Cited

U.S. PATENT DOCUMENTS

4,943,932	7/1990	Lark et al.	364/513
5,057,996	10/1991	Cutler et al.	364/200
5,101,364	3/1992	Davenport et al.	395/152
5,119,475	6/1992	Smith et al.	395/156
5,181,162	1/1993	Smith et al.	364/419
5,195,172	3/1993	Elad et al.	395/50
5,226,161	7/1993	Khoyi et al.	395/650
5,247,693	9/1993	Bristol	395/800
5,249,270	9/1993	Stewart et al.	395/200
5,257,384	10/1993	Farrand et al.	395/725
5,261,080	11/1993	Khoyi et al.	395/500
5,274,572	12/1993	O'Neill et al.	364/550
5,276,775	1/1994	Meng	395/55
5,287,447	2/1994	Miller et al.	395/157
5,293,470	3/1994	Birch et al.	395/135
5,297,283	3/1994	Kelly, Jr. et al.	395/650
5,315,703	5/1994	Matheny et al.	395/164
5,367,633	11/1994	Matheny et al.	395/164
5,369,766	11/1994	Nakano et al.	395/700
5,379,430	1/1995	Nguyen	395/700
5,388,264	2/1995	Tobias, II et al.	395/650
5,390,325	2/1995	Miller	395/575
5,396,626	3/1995	Nguyen	395/700
5,398,336	3/1995	Tantry et al.	395/600
5,504,892	4/1996	Atsatt et al.	707/103

5,519,862	5/1996	Schaeffer et al.	395/701
5,574,915	11/1996	Lemon et al.	395/561
5,778,378	7/1998	Rubin	707/103
5,787,425	7/1998	Bigus	707/6

OTHER PUBLICATIONS

Text of IBM Technical Disclosure Bulletin, vol. 37, DeBinder et al., Feb. 1994, "Results Folder Framework", pp. 431-432.

Text of IBM Technical Disclosure Bulletin, vol. 36, Coskun, N., Jun. 1993, "Persistent Framework Independent Record/Playback Framework", pp. 261-264.

Text of IBM Technical Disclosure Bulletin, Baker et al., Oct. 1991, "Model View Schema", pp. 321-322.

Text of IBM Technical Disclosure Bulletin, Baker et al., Oct. 1991, "Office Container Class", pp. 309-310.

Text of IBM Technical Disclosure Bulletin, Cavendish et al., Jul. 1991, "Icon Pane Class", pp. 118-119.

Text of IBM Technical Disclosure Bulletin, Baker et al., Jun. 1991, "Distribution List Class", p. 159.

Text of IBM Technical Disclosure Bulletin, Cavendish et al., Jun. 1991, "Object-Oriented Documentation Tool", pp. 50-51.

(List continued on next page.)

Primary Examiner—Jack M. Choules

Assistant Examiner—Shahid Alam

Attorney, Agent, or Firm—Martin & Associates, LLC;
Derek P. Martin

[57] ABSTRACT

An object-oriented framework mechanism for persistent storage systems provides an infrastructure that embodies the steps necessary for a framework consumer (i.e., user) to define persistent storage for any type of data not supported in an object-oriented system by extending the framework to fit a particular persistent storage environment. Certain core functions are provided by the framework, which interact with extensible functions. A user may thus define extensible functions that allow the framework to support many different types of persistent data stored in datastores capable of storing the persistent data.

55 Claims, 24 Drawing Sheets

